

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-024432**Date Inspected:** 17-Jun-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Pat Swain and Jesse Cayabyab**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** SAS Tower**Summary of Items Observed:**

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At Tower Base Skin Plate 'B' to Diaphragm Plate, elevation 9 meters;

At Tower Base Skin Plate 'B' (45mm) to Diaphragm Plate (45mm) weld joint #051, this QA Inspector randomly observed ABF personnel Wai Kitlai continuing to perform production 1G welding on the Partial Joint Penetration (PJP) of T-joint between the 45mm thick skin plate and 45mm thick diaphragm plate. The welder was using the dual shielded Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. This QA Inspector observed ABF personnel using Miller Proheat 35 Induction Heating System to preheat the plates being welded prior to and after welding. This QA Inspector observed QC Inspector Pat Swain using a Fluke infra red temperature gauge to verify the preheat temperature of more than 225°F. This QA Inspector performed a verification of the welding parameters and observed 285 amperes and 24.7 volts with a travel speed of 388 mm per minute with equivalent heat input of 1.08 Kj per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. At the end of the shift, cover pass welding was partially completed along the length of the joint and should continue tomorrow. ABF personnel were noted covering the weld with heater blanket in preparation for the three hours holding of preheat temperature of more than 225°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold the preheat that was programmed to shut off after three hours.

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At Tower Base Elevation 13Meters Shear Plate Electro Slag Welding (ESW);

After the electro slag welding (ESW) completion of the transition weld joint E-044 at location 'B', ABF personnel were noted dismantling the Hilti MI-90 strut column and its bracket that were used to hold the water cooled weld shoes and moved them to the next new location weld joint E-045 at location 'F' which is scheduled to be welded June 18, 2011. ABF personnel were noted erecting the Hilti MI-90 strut columns in position in preparation for the next ESW. Some personnel were noted tack welding the brackets that support the Hilti MI-90 strut column to the strong back supports while some personnel were noted wire cleaning the surface of the joint and its adjacent metal.

ABF QC Jesse Cayabyab and this QA performed a joint fit up verification on the T- joint E-045 at location 'F' to be welded tomorrow. The measured root gap from bottom to top was noted 18mm minimum and 22mm maximum. There was no lesser than 16mm nor more than 25mm root gap noted from the bottom to the top of the T-joint. With the measurements that were taken during the fit up verification, the fit up of the weld T- joint was deemed in compliance to the contract requirements.

Other related welding activities noted at the tower base include grinding on the groove bevel surface of PJP T-joint #052 Tower South Shaft skin plate 'B' 45mm thick to 45mm thick diaphragm plate in preparation for the next welding. The groove bevel surface grinding was completed and ready for FCAW-G welding.

Grinding off the partial welded root on Tower Base Skin Plate 'B' (45mm) to Diaphragm Plate (45mm) weld joint #051 due to porosity was noted ongoing.

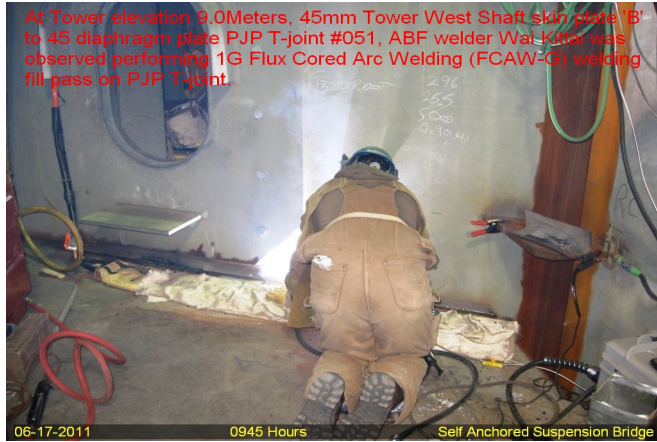


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### Summary of Conversations:

No significant conversation occurred today.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

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**Inspected By:** Lizardo, Joselito

Quality Assurance Inspector

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**Reviewed By:** Levell, Bill

QA Reviewer